

re-published at Venice, the classical centre of the maritime art.¹ This compilation continued to be cited in Portugal long after the author had been driven out: thus, in the *Seportorio dos Tempos* (Lisbon, 1518) there are to be found tables of the declination of the sun, "punctually taken from Zacuto by the honest Gaspar Nicolas".

The tables of Zacuto were carried in the fleets of Vasco da Gama, Cabral, Joao da Nova and Albuquerque; but are most important for the use made of them by Christopher Columbus. In his writings, the latter mentions how he consulted the "Almanack" on his voyages and how, on one occasion, he saved himself and his companions from a difficult position by predicting an eclipse with its aid. It is pretty obvious that it is Zacuto's tables to which he here refers. In any case, it is indubitable that he took them with him on his later voyages: for there is preserved at Seville a copy of the Leiria edition which belonged to the great explorer. It has been conjectured that it was presented to him by the author or translator, and bears manuscript annotations from Columbus' own pen.

It was in Portugal that Zacuto's personal activity reached its zenith. Here he devised a new astrolabe, which he manufactured for the first time of iron, instead of wood (as had previously been customary), thus rendering that hitherto cumbrous instrument available for ordinary use. The assistance which he gave to Vasco da Gama, before he set out on the voyage which resulted

in the discovery of the sea-route to India,
was of the
utmost importance. His opinion was
asked by the
Court before the expedition was authorised.
The ships
were provided with his improved
astrolabe, and in

¹There were other editions here in 1500, 1502, 1525
and 1528, and
the work has been reproduced more than once in
facsimile. See, most
recently, A. Fontoura da Costa, *L' Almanack Perpetuum*
de Abraham
f004(1934, 1935).